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Marine Physical Laboratory

Mapping Bathymetric Slopes from Bathymetry Data

Christian de Moustier

Final Report to the
Office of Naval Research
Grant N00014-89-J-3174
for the Period 07-01-89 - 06-30-91

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Mapping Bathymetric Slopes from Swath Bathymetry Data

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Abstract

The objectives of this work were to develop slope calculation and mapping algorithms for use with Sea Beam bathymetry data. The ability to quantify and map in geographic coordinates apparent bottom slopes, as measured by the sonar in a given region, provides important clues for the level of acoustic bottom reverberation that can be expected from the region on purely geometric grounds.

Research Summary

Two versions of this slope mapping software have been implemented: one based on single swath data to preserve as much of the detailed structure of the seafloor morphology sampled, and one based on gridded data that are inherently smoother. This software was integrated into Scripps Institution of Oceanography's Swath Bathymetry Processing and Display software package that has been distributed to several other institutions (e.g. LDEO, U. Hawaii, U. Washington, WHOI) and a number of individual investigators who have requested it.

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